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L2: Entry 2 of 2

File: USPT

Apr 10, 1990

DOCUMENT-IDENTIFIER: US 4915830 A
TITLE: Pulp wash press

Brief Summary Text (3):

In the processing of wood chips to pulp, the chips are placed in a digester, which is a large vessel containing a solution referred to as "cooking liquor". The pulp and cooking liquor are then heated under pressure in order to remove the resins and to dissolve the lignin which holds together the desired cellulose fibers in the wood. The pulp, as it is discharged from the digester, contains a high proportion by weight of the cooking liquor. The liquor must be removed from the pulp before the pulp can be used in the manufacture of paper.

Brief Summary Text (6):

U.S. Pat. Nos. 4,088,528 and 4,214,947, illustrate a pressure screw grinder and digester, respectively, wherein grinding and/or delignification is achieved by passing the raw material between interpenetrating helicoidal surfaces driven synchronously in rotation inside a casing. A braking zone is provided in which the pitch of the screw surfaces is reversed, thereby effectively forming a restriction. In these patents, the differences in pitch in part define different zones, where different chemical and/or mechanical processes are carried out. In one embodiment, the cellulosic material in the form of chips, it is passed in succession through a first braking zone which causes a first compression of the material, a subsequent zone where the material is brought into contact with a reagent, and another braking zone which causes a second compression. The first compression stage causes the expulsion, along the screw axis, of water present in the material and each subsequent compression causes the expulsion of any spent reagent and of residual liquors in the material.

Brief Summary Text (14):

In a preferred embodiment, an additional, final pressing section is located between the repressing section and the discharge port, the final pressing section having a perforated, substantially cylindrical inner wall formed in the screw shaft and a tapered compression ring defining an outer wall spaced from the inner wall.

Current US Cross Reference Classification (3):
162/18

Current US Cross Reference Classification (4):
162/38

Current US Cross Reference Classification (5):
162/60

CLAIMS:

3. The washing press of claim 1, further including a final pressing section between the repressing section and the discharge port, the final pressing section having a perforated, substantially cylindrical inner surface and a tapered compression ring defining an outer surface spaced from the inner surface, whereby at least some of the washing liquid remaining in the repressed pulp, that emerges from the repressing section, is forced through said perforations before the repressed pulp is discharged from the housing.

8. The washing press of claim 7, further including a final pressing section between the repressing section and the discharge port, the final pressing section having a perforated, substantially cylindrical inner surface and a tapered compression ring defining an outer surface spaced from the inner surface, whereby at least some of the washing liquid remaining in the repressed pulp, that emerges from the repressing

section, is forced through said perforations before the repressed pulp is discharged from the housing.